

LINAC COMMISSIONING FORM

21-sep-2001

Major Category: CCL Module 1-4

Sub-Category: Beam Sub-category (for CCL Module 2)

Sub-System (e.g. beam emittance, or BPM etc.): Steering

Objective: Guide the beam through the center of the module 1-2 quads (horizontal and vertical directions)

Requested by: J.Galambos

Date Proposed:

Estimated Time to Complete: 1 shift

Estimated Manpower to Complete: 2 man-shifts

Priority/Order: high/2

Basic Equipment Needs (e.g. which diagnostics): BPMs, and dipole correctors

Special Equipment Needs: None

Software/Application needs: Steering algorithm

Input Beam Requirements: Short pulse beam (100 μ sec), > 20 mA, 10 Hz

Other prerequisites: None

Correlations Sought: None

Procedure: Vary each corrector in Modules 1-2 independently and observe the effect on the positions of each BPM. Using this response matrix, find the combination of dipole corrections that minimizes the average beam offset between the orbit and BPM center, subject to dipole corrector constraints. Note that there are many more BLMs than BPMs: a similar variant of this procedure could be to use BLM signals instead of BPM positions.

Supporting Computations: None

Problems Expected: None

Comments: If the beam based quad alignment has been done, then appropriate corrections to the BPM centers should be included in the procedure.

Date Completed LANL:

Date Completed ORNL:

Results:

Problems Encountered: